

In the Specification

On page 3, under Summary of the Invention:

Object and advantages of the invention will in part be obvious, and will in part appear thereafter, and will be accomplished by the present invention which provides methods and apparatus for locating an RFID transponder in space. The invention comprises one or more RFID transponders for broadcasting identification data. A plurality of antenna suitable for receiving the identification data which is broadcast by the transponders are associated with support members such as shelves which are positioned at known vertical locations. There is at least one antenna associated with each of the support members or shelves, and there typically may be two or more such antennas arranged side by side on each such shelf or support member. The support members or shelves support products or packages that include or have one of the RFID transponders attached thereto. According to a preferred embodiment, the RFID transponders do not include their own power supply and absorb or store power that is provided by the interrogation antennas (passive transponders). There is also included control circuitry connected to the plurality of antennas for determining which of the antennas receive the identification broadcast data that is broadcast from one or more of the RFID transponders. The transponders usually have rather short broadcast distances so that only those antenna which are within approximately two or three feet of the transponder will receive the identification data. Of course, depending on the application, transponders with shorter or longer range would be appropriate. The control circuit also determines the location of the RFID transponder as a function of the antennas which receive the information data and as a function of the support members or shelves which are associated with receiving the information data. Also, according to a preferred embodiment, the antennas are preferably flat or loop antennas which lie substantially in the plane of the shelf or surface of the support member.